Product Description Document for the Experimental 10% Probability of Exceedance Wind Gust Grid (G10)

NWS WFO – Elko, NV

Part 1 – Mission Connection

1. Product/Service Description:
    a. The Experimental 10% Probability of Exceedance Grid (G10) reflects the upper end of the wind gust spectrum that can be expected for a 12-hour period.
    b. In theory, there is a 10% chance that the highest wind gust for the period will exceed the grids' values.

2. Purpose/Intended Use:
    a. This product is intended to give users an idea of the maximum wind gust possible during a 12-hour period.

3. Audience/Users:
    a. Expected users are the fire weather community as well as the general public.

4. Presentation Format:
    a. The product will be in an image format available on WFO Elko's internet page.
    b. The units are in miles per hour (mph) and the grid valid times will be from 8 AM to 8 PM and 8 PM to 8 AM PST. An image is included below (Fig. 1).

5. Feedback Method:
    a. Feedback will be solicited via a user survey that will be posted on the website until September 30, 2009.
    b. Customers will also be encouraged to provide feedback through e-mail to: ryan.knutsvig@noaa.gov.

Part 2 – Technical Description

1. Format and Science Basis
    a. This product is a 10% probability of exceedance grid. To be reliable, the maximum wind gust for the period will exceed the grid's values 10% of the time.
    b. To populate these grids initially, forecasters will run a procedure that takes the maximum wind speed in the boundary layer for a model of choice. The forecasters' mixing height grids will be used to determine the depth of the boundary layer. As a check, the forecasters' official wind gust grids will be compared to this calculated grid to result in an objective starting point.

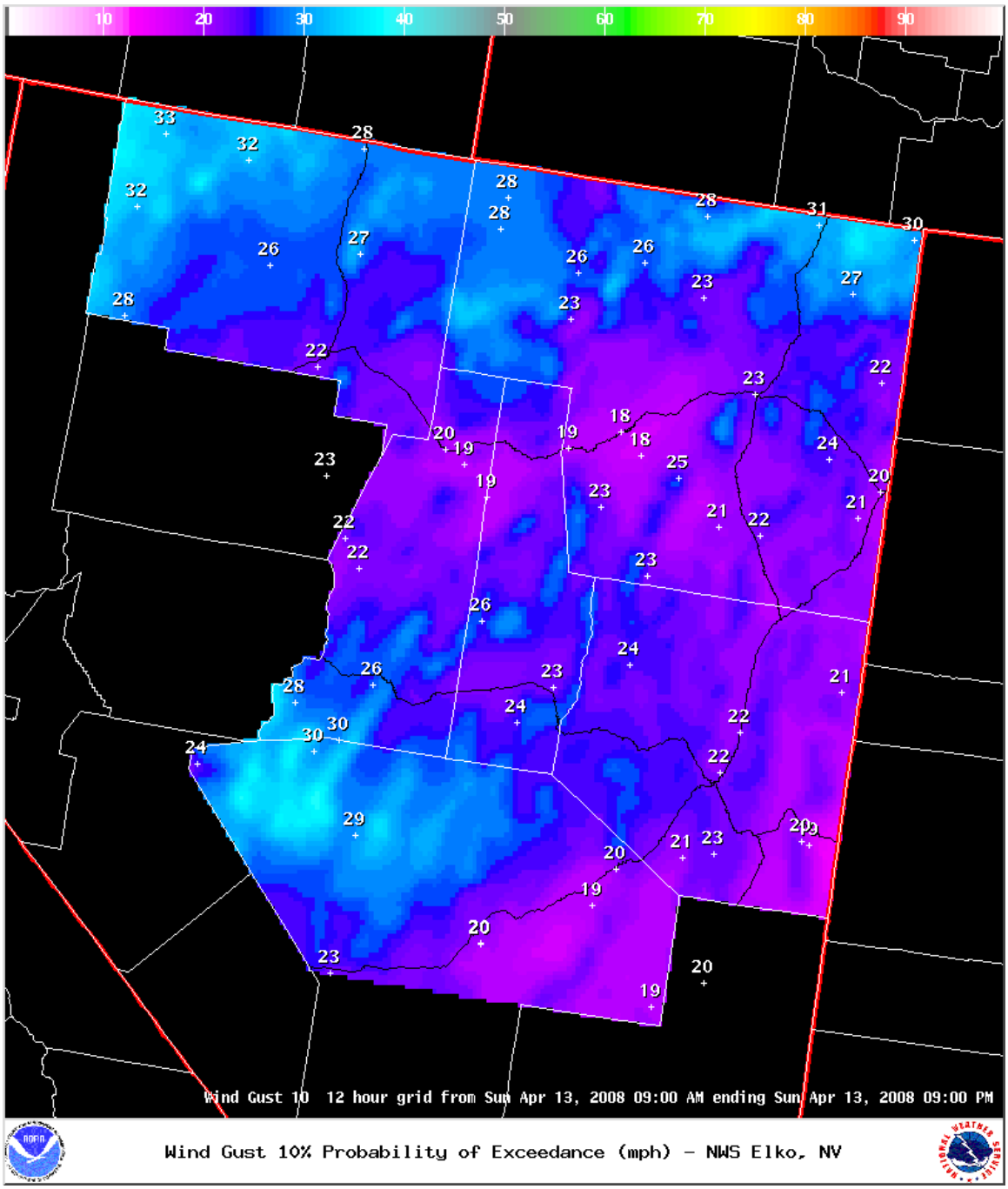

Figure 1: Example Experimental 10% Probability of Exceedance Image.

Forecasters will then modify the objective grid as needed to reflect influences from convection, downslope winds, etc.

2. Availability
   a. This product will be available on the internet at WFO Elko's website and will be produced twice per day (4 AM and 4 PM).